SW AP01 – AUTOPILOT

Seiwa range of autopilots is suitable for small powerboats, cruising and racing yachts, powerboats, workboats, fishing vessels and coastal freighters.

Products Description

The SW AP01 and SW AP03 autopilots with intelligent, self-tuning software, (and rate gyro compass with SW AP01) offer all the features you need for accuate course-holding and performance reliability in any sea conditions. Both pilots are suitable for either power or sailing vessels from 6m - 40m.

The difference between the two models comes down to whether you prefer to turn a knob to change course (SW AP03) or to press buttons on a touch-control panel (SW AP01).

The rate gyro compass maximises autopilot performance and minimises the effects of acceleration, roll and pitch. The combination of these two features means that SW AP01 is able to steer a more accurate course with less rudder movement resulting in lower power consumption and less wear and tear on the vessel's steering system.

Simple to operate, the SW AP01 offers skippers the convenience and reliability of an extra hand on the helm.

Both unit have all the features you need to hold course in all sea conditions.

Summary of Features

- Large graphic display: rudder angle, backlit LCD with wide viewing angle, on-screen display of GPS information in a compact, waterproof 110 x 110mm case
- *Intelligent*, self-tuning software: automatically adjusts for speed, sea conditions and trim
- Interfaces: GPS, wind instruments, digital compass information
- Autotack, autogybe with adjustable angle
- Rate Gyro Compass: accurate courseholding, reduced fuel consumption, performance stability
- Auto/manual compass calibrations
- Drive options: linear, hydraulic, rotary, solenoid
- Remote options: second station, remote steering, jog lever, electric steering

SW AP01 Features

- Supply Voltage Range nominal): 12 to 14V dc
- Maximum Supply Voltage Range: 10 to 16V dc
- Supply Current:
    - Basic system in STANDBY: 0.33A
    - Add for Controller 2: 0.15A
    - In Pilot with 20% duty: 2.5A
- Compass: Fluxgate in damped suspension
    - Typical deviation: 2.5 deg rms.
- Rudder Transducer: Potentiometer type
- Rudder position accuracy: 1 deg.
- Max rudder angle: +/- 60 deg.
- Clutch drive: 1V below the supply voltage at 1A
- Steering Drive:
    - Output for 12V supply: 10V at rated load
    - Output for 24V supply: 22V at rated load
    - Max continuous current 16A
    - Max current for 15 sec.: 20A
    - Max current for 1 sec.: 40A
- Mechanical drive steering: motor Printed rotor with gearbox and electromechanical clutch.
- Torque:
    - 12V unit: 120kg-cm at 30 rpm/5A.
    - 24V unit: 150kg-cm at 40 rpm/7.5A.

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- Hydraulic drive systems: See manufacturers' specs.
- Recommended response times:
    - Hull length up to 11mt: 8 sec. for -20 to +20 deg swing.
    - Hull length 11 to 13m: 10 sec. for -20 to +20 deg swing.
    - Hull length above 13m: 12 sec. for -20 to +20 deg swing.

Navigation interphace
NMEA PORTS
Data format and sentences to comply with NMEA0183 V3.00

- Serial data format:
    - Baud Rate: 4800
    - Character format: start bit, 8 data bits, LSB first, MSB (bit 7) = 0, no parity bit, 1 or 2 stop bits
    - Polarity:
        - Idle, stop bit,logic'1': Line A < 0.5V above line B.
        - Start bit, logic '0': Line A > 4V above Line B.

INPUT/OUTPUT PORTS

- Input port(s): Isolated via optocoupler
    - Input res istance: 1000 ohm min.
- Output port: Non-isolated differential output
    - Output voltage: 18 V p-p (typical)
    - Source resistance: 1500 ohm max

AUTOMATIC SENTENCE SELECTION
For navigation inputs, the system looks for groups of sentences in this order:

- RMB
- APB
- APA
- BOD and XTE

The search stops when the first sentence in the list is found. If it reaches BOD/XTE, and only one of these is present, the autopilot operates from the data in that sentence.
For wind vane inputs, the system looks for sentences in this order:

- MWV
- VWR

Note that the MWV sentence should contain the symbol R following the wind angle field.

For a digital heading input, the system looks either for the HDG or HDT sentence, depending on which one is selected in the Menu 3 option. Variation and deviation fields are not read.
OUTPUT DATA
The system outputs heading data in either the IIHDG sentence (without deviation or variation data) or as IIHDT, using the magnetic variation set within the autopilot. The repetition rate is a minimum of 8 per second.

The box contains:

- #1 Autopilot control head (UX0AP030SW);
- #1 Suncover;
- #1 Autopilot junction box 12v (S81.01);
- #1 Fluxgate Compass (S81.02);
- #1 Rudder transducer (S81.03);
- #1 User Manual (english);

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SW AP03 – AUTOPILOT

Seiwa range of autopilots are suitable for small powerboats, cruising and racing yachts, powerboats, workboats, fishing vessels and coastal freighters.

Product Description

The SW AP01 and SW AP03 autopilots with intelligent, self-tuning software, (and rate gyro compass with SW AP01) offer all the features you need for accurate course-holding and performance reliability in any sea conditions. Both pilots are suitable for either power or sailing vessels from 6m - 40m.

The difference between the two models comes down to whether you prefer to turn a knob to change course (SW AP03) or to press buttons on a touch-control panel (SW AP01).

The rate gyro compass maximises autopilot performance and minimises the effects of acceleration, roll and pitch. The combination of these two features means that SW AP01 is able to steer a more accurate course with less rudder movement resulting in lower power consumption and less wear and tear on the vessel's steering system.

Simple to operate, the SW AP01 offers skippers the convenience and reliability of an extra hand on the helm.

Both unit have all the features you need to hold course in all sea conditions.

Summary of Features

- Intelligent, self-tuning software - automatically adjusts for speed, sea conditions and trim
- Rate Gyro Compass: accurate course holding and reduced fuel consumption
- interfaces - GPS, wind instruments, digital compass information
- Autotack, autogybe with adjustable angle
- Auto/manual compass calibrations
- Graphics display showing rudder angle, backlit LCD and on-screen display of GPS information.
- Drive options: linear, hydraulic,l rotary, and solenoid
- comprehensive range of remote steering options including second station, remote steering, jog lever, electric steering

Technical Specifications

- Supply Voltage Range nominal): 12 to 14V dc
- Maximum Supply Voltage Range: 10 to 16V dc
- Supply Current:
    - Basic system in STANDBY: 0.33A
    - In Pilot with 20% duty: 2.5A
- Compass: Fluxgate in damped suspension
    - Typical deviation: 2.5 deg rms.
- Rudder Transducer: Potentiometer type
- Rudder position accuracy: 1 deg.
- Max rudder angle: +/- 60 deg.
- Clutch drive: 1V below the supply voltage at 1A
- Steering Drive:
    - Output for 12V supply: 10V at rated load
    - Max continuous current: 16A
    - Max current for 15 sec.: 20A
    - Max current for 1 sec.: 40A
- Mechanical drive steering: motor Printed rotor with gearbox and electromechanical clutch.
- Torque:
    - 12V unit: 120kg-cm at 30 rpm/5A.
- Hydraulic drive systems: See manufacturers' specs.
- Recommended response times:
    - Hull length up to 11mt: 8 sec. for -20 to +20 deg swing.

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- Hull length 11 to 13m: 10 sec. for -20 to +20 deg swing.
- Hull length above 13m: 12 sec. for -20 to +20 deg swing.

Navigation interphace
NMEA PORTS
Data format and sentences to comply with NMEA0183 V3.00

- Serial data format:
  - Baud Rate: 4800
  - Character format: start bit, 8 data bits, LSB first, MSB (bit 7) = 0, no parity bit, 1 or 2 stop bits
  - Polarity:
    - Idle, stop bit,logic'1': Line A < 0.5V above line B.
    - Start bit, logic '0': Line A > 4V above Line B.

INPUT/OUTPUT PORTS

- Input port(s): Isolated via optocoupler
  - Input res istance: 1000 ohm min.
- Output port: Non-isolated differential output
  - Output voltage: 18 V p-p (typical)
  - Source resistance: 1500 ohm max

AUTOMATIC SENTENCE SELECTION
For navigation inputs, the system looks for groups of sentences in this order:

- RMB and RMC
- RMB and GLL
- APB and GLL
- APA and GLL
- BOD and XTE

The search stops on the first complete group. If only one sentence is found from the above combinations, the autopilot operates from the data in that sentence.
For wind vane inputs, the system looks for sentences in this order:

- MWV
- VWR

Note that the MWV sentence should contain the symbol R following the wind angle field.

For a digital heading input, the system looks either for the HDG or HDT sentence, depending on w hich one is selected in the Menu 3 option. Variation and deviation fields are not read.
OUTPUT DATA
The system outputs heading data in either the IIHDG sentence (without deviation or variation data) or as IIHDT, using the magnetic variation set within the autopilot. The repetition rate is a minimum of 8 per second.

The box contains:

- #1 Autopilot control head (UX0AP030SW);
- #1 Suncover;
- #1 Autopilot junction box:
  - NOTE: 12v (S81.01) or 24v (S81.04);
- #1 Fluxgate Compass (S81.02);
- #1 Rudder transducer (S81.03);
- #1 User Manual (english);

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